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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

QUINONES, ISMAEL C

ART UNIT	PAPER NUMBER
2686	7

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,323

Applicant(s)

LUNDQVIST ET AL.

Examiner

Ismael Quiñones

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Action is in response to Applicant's amendment filed on December 15, 2000. **Claims 1-25** are now pending in the present application. **This Action is made NON-FINAL.**

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on August 08, 2001 has being considered by the examiner and made of record in the application file.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 23 and 24** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure and the drawings of the present application fails to mention how the size of the difference is determined or calculated and how the difference level itself can be used for determining whether a new cell

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belongs to any group to which no member of the active set belongs. A person with ordinary skill in the art will not be able from the disclosure or the drawings to determine whether a new cell belongs to any group to which no member of the active set belongs depending upon the size of the difference level or the difference level itself.

6. **Claim 25** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of a candidate cell being compared with two different thresholds for determining if said candidate cell should be added into an active list introduces new matter. The specification and drawings of the instant application fail to disclose either implicitly or explicitly the use of a first and a second threshold to determine whether or not a candidate cell should be added into the active list. Applicant is welcomed to point out where in the specification or the drawings the Examiner can find support for the above said limitation if Applicant believes otherwise.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

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subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. **Claims 1-3, 10-14, 21-25** are rejected under 35 U.S.C. 102(e) as being anticipated by Haberman et al. (U.S. Pat. No. 6,035,197).

Regarding **claims 1 and 12** Haberman et al. disclose a mobile cellular telecommunications network employing macro-diversity and a method for controlling the same (A method and a system for establishing various radio connections over the same radio spectrum in a CDMA system; *col. 2, line 64 thru col. 3, line 4*), wherein a mobile station can establish a plurality of simultaneous radio links with cells in the network (Base stations comprising scanning receivers and pilot signal transmitters for establishing simultaneous radio connections over the same radio spectrum in a CDMA cellular communication system, furthermore generating an ACTIVE SET for identifying radio connections associated with cells through which the mobile station is communicating; *col. 1, lines 36-40; col. 2, lines 47-51; col. 9, lines 2-6; Fig. 1, items 50 and 51*), wherein the cells of the network are considered in groups (A cellular communication system having a digital portion including a group of digital cells and an analog portion including a group of analog cells; *col. 7, lines 11-24; Fig. 1*), and wherein, when determining whether to establish a new radio link between a mobile station and a new cell, the network applies a quality criterion to the new link (Classifying pilot signals associated with a cell into an active set according to a satisfied criteria; *col. 9, lines 2-6*), which depends on whether the new cell belongs to any group with which the mobile station does not already have a link (Wherein a mobile station has already establish communications

with the digital portion or group of the system, and wherein the new candidate cell is an analog cell to which the mobile station does not already have a link, furthermore an active set being exclusively comprised of digital cells, until the mobile station is handed off to an analog cell; *col. 9, lines 33-46; col. 10, lines 29-67; Fig. 3).*

Regarding **claim 2 and claim 13**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, wherein the network applies a more easily satisfied criterion to the establishment of a new link with a cell in one or more groups with which the mobile station already has a link (Wherein if the candidate cell integrates the digital group of cells a more easily satisfied criteria is applied in order to determine eligibility for the ACTIVE SET; *col. 10, lines 9-16; Fig. 3, steps S2 and S4*), and a less easily satisfied criterion to the establishment of a new link with a cell in a group with which the mobile station currently has no link (Wherein if the candidate cell integrates the analog group of cells a second criteria or less easily satisfied criteria is applied in order determine eligibility for handing off communications to an analog cell; *col. 10, lines 45-50; Fig. 3, steps S4 and S6*).

Regarding **claim 3 and claim 14**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, wherein the quality criterion relates to a signal quality level (Wherein the quality criteria relies upon the pilot signal strength of the candidate cell and an active set; *col. 10, lines 6-16*).

Regarding **claim 10 and claim 21**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, wherein each mobile station has an active list of cells to which it has radio links (An active set which identifies pilot signals or radio connections associated with cells through which the mobile station is to communicate; *col. 9, lines 7-9*), and the criteria for establishing a new radio link are set relative to the quality of the radio links to cells on the active list (Measuring the pilot signals from the cells in the active set and determining whether the signal strength of those cells in the active set exceeds a predetermined threshold; *col. 10, lines 45-60*).

Regarding **claim 11 and claim 22**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, which uses Code Division Multiple Access (*col. 7, lines 11-16*).

Regarding **claims 23 and 24** Haberman et al. disclose a mobile cellular telecommunications network employing macro-diversity and a method for controlling the same (A method and a system for establishing various radio connections over the same radio spectrum in a CDMA system; *col. 2, line 64 thru col. 3, line 4*), wherein a mobile station can establish a plurality of simultaneous radio links with cells in the network (Base stations comprising scanning receivers and pilot signal transmitters for establishing simultaneous radio connections over the same radio spectrum in a CDMA cellular communication system, furthermore generating an ACTIVE SET for identifying radio connections associated with cells through which the mobile station is communicating;

col. 1, lines 36-40; col. 2, lines 47-51; col. 9, lines 2-6; Fig. 1, items 50 and 51), the cells with which the mobile station has established radio links being defined as an active set (Classifying pilot signals associated with a cell into an active set according to a satisfied criteria; *col. 9, lines 2-6*), wherein the cells of the network are considered in groups (A cellular communication system having a digital portion including a group of digital cells and an analog portion including a group of analog cells; *col. 7, lines 11-24; Fig. 1*), and wherein the network determines whether to establish a new radio link between a mobile station and a new cell, by determining whether a quality value of the new radio link exceeds a threshold set at a difference level below a best cell in the active set (Wherein if a pilot signal associated with an analog cell exceeds a predetermined threshold "Threshold₁" set below the best cell in the active set, said pilot signal associated with the analog cell can be included in a candidate set, if subsequently any of the pilot signals including the best cell in the active set do not exceed a second predetermined threshold "T_{drop}", said pilot signal associated with the analog cell a handoff message is sent to the mobile station to tune to an analog frequency of the analog cell; *col. 10, lines 45-60; Fig. 3*), the size of the difference level depending on whether the new cell belongs to any group to which no member of the active set belongs (Wherein the new cell is an analog cell and the cells in the active set are digital cells; *col. 9, lines 42-47; col. 10, lines 45-60*).

Regarding **claim 25**, Haberman et al. disclose method for performing a handover in a mobile telecommunications network (A method for providing handoff in a cellular telecommunication network; *col. 6, lines 19-24*), the method comprising: allocating a

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plurality of network cells into a plurality of groups (A cellular communication system having a digital portion including a group of digital cells and an analog portion including a group of analog cells; *col. 7, lines 11-24; Fig. 1*); providing a mobile station adapted to establish a plurality of simultaneous radio connections with the plurality of network cells (Base stations comprising scanning receivers and pilot signal transmitters for establishing simultaneous radio connections over the same radio spectrum in a CDMA cellular communication system, furthermore generating an ACTIVE SET for identifying radio connections associated with cells through which the mobile station is communicating; *col. 1, lines 36-40; col. 2, lines 47-51; col. 9, lines 2-6; Fig. 1, items 50 and 51*); establishing an active set of cells for the mobile station wherein the active set of cells establish radio connections with the mobile station (Classifying pilot signals associated with a cell into an active set according to a satisfied criteria; *col. 9, lines 2-6*), and wherein at least one cell in the active set is a member of a first group of the plurality of groups (Wherein the ACTIVE SET can comprise digital cells which integrate the digital portion or group of the cellular communication system; *col. 7, lines 11-24; Fig. 1*); determining if a candidate cell should be added to the active set of cells (*Fig. 3*); wherein the determining comprises: determining if the candidate cell is a member of the first group (Determining if the pilot signal associated with the candidate cell is either a digital or analog cell; *col. 10, lines 30-32; Fig. 3, step S4*); if the candidate cell is a member of the first group, then applying a first threshold standard to determine if the candidate cell should be added to the active set (If the candidate cell integrates the digital group of cells a first predetermined threshold T_{h1} is applied in order to determine eligibility for the

ACTIVE SET; *col. 10, lines 9-16; Fig. 3, steps S2 and S4*); if the candidate cell is not a member of the first group, then applying a second threshold standard to determine if the candidate cell should be added to the active set (If the candidate cell integrates the analog group of cells a second predetermined threshold value T_{drop} is applied in order to determine eligibility for handing off communications to an analog cell; *col. 10, lines 45-50; Fig. 3, steps S4 and S6*).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. **Claims 4 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberman et al. (U.S. Pat. No. 6,035,197) in view of Achour et al. (WO 01/03464).

Regarding **claim 4** and **claim 15**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. Haberman et al. fail to clearly specify a relationship between the time period in which a signal quality level is satisfied and the mobile telecommunications network.

In the same field of endeavor, Achour et al. disclose a signal quality criteria for a respective base station threshold in which the time period (handoff transition) or “time drop” depends upon the threshold uphold (*Page 2, lines 18–23*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. mobile cellular telecommunications network and method for controlling the same to uphold a signal in between cell groups when the performance level falls or exceeds a threshold as taught by Achour et al. for the purpose of allowing better continuity when the mobile station is transitioning between groups avoiding to drop the previous radio link establishment.

12. **Claims 5-7 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberman et al. (U.S. Pat. No. 6,035,197) in view of Lind et al. (U.S. Pat. No. 6,163,694).

Regarding **claim 5** and **claim 16**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. Haberman et al. fail to clearly specify, wherein a plurality of layers of groups can be defined, such that each cell may be in one group within each layer.

In the same field of endeavor, Lind et al. disclose a method and an apparatus for standby state cell selection in a layered cellular telephone system, comprising a plurality of layers of groups (macro/"umbrella" cell, micro cell, and micro cell), each cell being in one group within each layer (*Fig. 1, col. 2, line 67 thru col. 3, line 7*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. mobile cellular telecommunications network and method for controlling the same to categorize different groups of cells into hierarchical layers as taught by Lind et al. for the purpose of providing an enhanced level of capacity which can be configured for individual circumstances and which provides services despite an extremely high demand within a very small geographical area.

Regarding **claim 6 and claim 17**, and as each applied respectively to claim 5 and claim 16, Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. In addition Lind et al. disclose an umbrella or macro cell served by a base station as a high hierarchy level overlaying a group of micro cells located within the overall coverage area of the macro cell (*col. 1, lines 49-59*).

Regarding **claim 7 and claim 18** and as each applied respectively to claim 5 and claim 16, Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. In addition Haberman et al. disclose wherein cells associated with one radio network controller are

considered to be in the same group (MTSO; *col. 1, lines 23-27; col. 2, lines 27-31; Fig. 1, item 30*).

13. **Claims 8-9 and 19** are rejected under 35 U.S.C. 103(a) as unpatentable Haberman et al. (U.S. Pat. No. 6,035,197) in view of Lind et al. (U.S. Pat. No. 6,163,694), further in view of Rinne et al. (U.S. Pat. No. 6,574,473).

Regarding **claim 8 and claim 19**, and as each applied respectively to claim 5 and claim 16, Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. In addition Lind et al. disclose a plurality of cell groups each associated with a serving base station (A plurality of macro cells each served by a base station as a high hierarchy level overlaying a group of micro cells located within the overall coverage area of the macro cell; *col. 1, lines 49-59; col. 3, lines 32-36; Fig. 1, items L1, C1-CN*). Furthermore, in addition, Haberman et al. discloses wherein cells associated with a radio network controller are considered to be in another group (MTSO that control handoff operations among a cell group; *col. 1, lines 23-27; col. 2, lines 27-31; Fig. 1, item 30*). Haberman et al. in view of Lind et al. fail to clearly specify wherein cells associated with a second radio network controller are considered to be in a group.

In the same field of endeavor, Rinne et al. disclose a 3rd generation cellular system comprising plurality of radio network controllers (*Fig. 4, RNC*) each associated with a plurality of base stations (*Fig. 4, BS*) or cell groups (*col. 3, lines 9-18; Figure 4; Fig. 7*); the base stations and cells groups as an integral part of the telecommunications network.

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same comprising a singular radio network controller to include a plurality of network controllers compounding an entire communications network as taught by Rinne et al. for the purpose of categorizing the parameters and the criteria for priority radio link establishment selection in a telecommunications network employing macro-diversity.

Regarding **claim 9**, and as applied to claim 5, Haberman et al. in view of Lind et al. disclose the aforementioned mobile-layered cellular telecommunications network, wherein a less satisfied and a more satisfied network quality criterion for the establishment of radio links is applied to cells groups associated with a base station, Haberman et al. in view of Lind et al. fail to clearly specify a network quality criterion for the establishment of radio links with cell groups associated with a radio network controller (base station controller) which the mobile station currently has no radio link.

In the same field of endeavor Rinne et al. disclose a criterion for cell groups associated with a radio network controller (base station controller) for the establishment of radio links with a mobile station, where handover between radio network controllers are made based on the transition of the mobile station between the cells (coverage areas) provided by the base stations where such base stations are associated with different radio network controllers (*col. 1, lines 53-59; col. 4, lines 45-48; col.4, lines 56-58*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. in view of Lind et al. mobile-

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layered cellular telecommunications network including a quality criterion for the establishment of radio links with cells associated with different radio network controllers as taught by Rinne et al. for the purpose of enhancing radio communications performance when a mobile station movement is transitioning within a relative great scale, furthermore enhancing the reliability of such components establishing radio links about the telecommunications network.

14. **Claim 20** is rejected under 35 U.S.C. 103(a) as unpatentable over Haberman et al. (U.S. Pat. No. 6,035,197) in view of Rinne et al. (U.S. Pat. No. 6,574,473).

Regarding **claim 20**, and as applied to claim 12, Haberman et al. disclose the aforementioned method, wherein a less satisfied and a more satisfied network quality criterion for the establishment of radio links is applied to cells groups associated with a base station. Haberman et al. fail to clearly specify a network quality criterion for the establishment of radio links with cell groups associated with a radio network controller (base station controller) which the mobile station currently has no radio link.

In the same field of endeavor Rinne et al. disclose a criterion for cell groups associated with a radio network controller (base station controller) for the establishment of radio links with a mobile station, where handover between radio network controllers are made based on the transition of the mobile station between the cells (coverage areas) provided by the base stations where such base stations are associated with different radio network controllers (*col. 1, lines 53-59; col. 4, lines 45-48; col.4, lines 56-58*).

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Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. method for controlling a mobile cellular telecommunications network including a quality criterion for the establishment of radio links with cells associated with different radio network controllers as taught by Rinne et al. for the purpose of enhancing radio communications performance when a mobile station movement is transitioning within a relative great scale, furthermore enhancing the reliability of such components establishing radio links about the telecommunications network.

Response to Arguments

15. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Barnett (U.S. Pat. No. 5,557,657), Handoff Between Overlay and Underlay Cells.
- b. Karlsson (U.S. Pat. No. 5,640,677), Best Server Selection in Layered Cellular Radio System.

17. Any response to this Office Action should be **faxed to** (703) 872-9306 or **mailed to:**

Commissioner of Patents and Trademarks

P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Crystal Park II
2021 Crystal Drive
Arlington, VA 22202
Sixth Floor (Receptionist)

18. Any inquiry concerning this communication on earlier communications from the Examiner should be directed to Ismael Quiñones whose telephone number is (703) 305-8997. The Examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm.


19. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379, and fax number is (703) 746-9818. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9301.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose number is (703) 305-4700 or call customer service at (703) 306-0377.

Ismael Quiñones

I.Q.

May 28, 2004


RAFAEL PEREZ-GUTIERREZ
PATENT EXAMINER
6/1/04